

RANA SALEM

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Experience

Software Developer

Jan 2024-present

DEFRA (Department for Environment, Food and Rural Affairs)

- Contracted through FDM Group to join the Farming Front Door (FFD) team as a junior software developer (specialising in Node.js) under the Farming and Countryside Programme (FCP).

IT Consultant & Software Developer

Apr 2023-present

FDM Group

- Working with one of FDM's public sector clients (Department for Environment, Food and Rural Affairs) as a junior software developer.
- Awarded the Tech Industry Gold Foundation Credential in Software Development for showcasing proficiency in Java, SQL, Unix, HTML, CSS, Spring Boot, Microservices, REST APIs, React, JavaScript, Git.

Laboratory Demonstrator

2022-2023

Glasgow Caledonian University

- Excelled as a teaching assistant, mentoring final year undergraduates and a PhD candidate, while demonstrating the use of laboratory equipment for independent research.
- Prioritised safety by enforcing health and safety measures during student's time in the laboratory, fostering a secure and safe learning environment.

Royal Society of Chemistry (RSC) Research Enablement Scholarship

May-Aug 2022

Glasgow Caledonian University & University of Glasgow

- Explored the effects of established textile conservation protocols on historic textile artefacts, with results presented as a poster and flash talk at the Microscience Microscopy Congress (MMC2023) in Manchester, England.
- Utilised advanced tools including AFM, SEM, and fluorescence spectroscopy to generate project data.

Postgraduate Research Intern (PUBLISHED)

Jul-Sep 2021

Glasgow Caledonian University & University of Glasgow

- Examined the effects of textile cleaning on historic cotton textiles using advanced instrumentation: AFM and UV/Vis (Ultraviolet/Visible) spectroscopy.
- The research was published in the peer-reviewed Heritage Science journal.

Royal Microscopical Society (RMS) Summer Studentship (PUBLISHED) Jun-Aug 2020

Glasgow Caledonian University & University of Glasgow

- Analysed textile fibres pre- and post-cleaning with established conservation protocols, with findings published in Infocus Magazine (an RMS publication).
- Featured a poster at the Microscience Microscopy Congress (MM2021) and delivered a local presentation to staff and students from the RMS and partner universities.

Projects

Personal Website (ranasalem.io)

- **Summary:** My personal portfolio website where I share my career history, projects, and write for my blog.
- **Role:** Sole developer and maintainer.
- **Tech stack:** TypeScript, Next.js, DaisuUI, Contentlayer, MDX (Markdown + JSX)

Busgres NPM Package (github.com/rtasalem/busgres)

- **Summary:** Node.js module that consumes Azure Service Bus messages from topics or queues and writes the data to a PostgreSQL database. Configurable with a single client.
- **Role:** Sole developer and maintainer.
- **Tech stack:** JavaScript (Node.js), NPM (Node Package Manager), Microsoft Azure Service Bus, PostgreSQL.

Draft My CV (github.com/rtasalem/draft-my-cv)

- **Summary:** Online form for generating professional CVs in Microsoft Word or PDF format from user input. Streamlines job applications.
- **Role:** Sole developer (full stack) and maintainer.
- **Tech stack:** JavaScript, Node.js, Express.js, Bulma, Nunjucks.

Barbie E-commerce Website (github.com/rtasalem/barbie-ecommerce-website)

- **Summary:** E-commerce website selling Barbie-themed outfits. Capabilities of the website include being able to add items to a shopping basket or wish list and searching for items either by name, description, or category.
- **Role:** Backend developer.
- **Tech stack:** Java, Spring Boot, REST API, JUnit, Mockito, JavaScript, React, HTML, CSS.

Take A Bao Shop Menu (github.com/rtasalem/take-a-bao-shop-menu)

- **Summary:** Read-only online menu for a pop-up bao bar that also acts as a fundraising platform. Early proof-of-concept developed with the intention to support a close friend's small business.
- **Role:** Sole developer (full stack).

- **Tech stack:** Java, Spring Boot, REST API, Postman, JavaScript, React, HTML, CSS.

Education

Master of Science w/ Merit, Forensic Science **2021-2022**

University of Strathclyde, MSc (Glasgow, Scotland)

- **Dissertation:** *Are Established Bleaching Practices in Textile Conservation Damaging Historic Treasures? A Microscopic and Spectroscopic Investigation.*

Bachelor of Science w/ 1st Class Honours, Forensic Investigation **2017-2021**

Glasgow Caledonian University, BSc (Hons) (Glasgow, Scotland)

- **Dissertation:** *Analysis of the Effect of Conservation Bleaching Methods on Historic Textiles.*

Erasmus+, Degree Programme in Laboratory Sciences

Aug-Dec 2019

Metropolia University of Applied Science (Helsinki, Finland)

- A semester spent as an exchange student in Helsinki, Finland.

Publications & Presentations

PUBLICATIONS

Salem, R.T.A., Thompson, K., Uttamlal, M. *Bleaching cotton in textile conservation: a closer look using atomic force microscopy.* Heritage Science. 2022;10:195. <https://doi.org/10.1186/s40494-022-00830-2>.

Salem, R. *RMS Summer Studentship Report: Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning.* Infocus Magazine: Proceedings of the Royal Microscopical Society. 2020;60:32-35. <https://doi.org/10.22443/rms.inf.1.194>.

PRESENTATIONS

Microscience Microscopy Congress (MMC2023)

Jul 2023

Salem, R.T.A., Thompson, K., Uttamlal, M. *Microscopic Analysis of New and Historic Cotton Fibre Cross-Sections.* Microscience Microscopy Congress 2023. Manchester Central Convention Complex (Manchester, England).

Microscience Microscopy Congress (MMC2021)

Jul 2021

Salem, R., Uttamlal, M., and Thompson, K. *Microscopic analysis of new and historic cotton textiles pre- and post-bleaching.* Microscience Microscopy Congress 2021. Poster abstract: <https://www.mmc-series.org.uk/mmc2021/abstract/microscopic-analysis-of-new-and-historic-cotton-textiles-pre-and-post-bleaching.html>.

Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning

Oct 2020

Royal Microscopical Society Summer Studentship 2020. Glasgow, Scotland.

Professional Development

- Microsoft Azure Fundamentals (AZ-900) Certification (Microsoft) **Oct 2023**
- Tech Industry Gold Credential: Software Development (TechSkills) **Jul 2023**

Awards & Achievements

- Royal Society of Chemistry Research Enablement Grant (£10,000) **May-Aug 2022**
- GCU Mitigation Reboot Fund (£5000) **Jul-Sep 2021**
- University of Strathclyde Faculty of Science Masters Scholarship (£1000) **Mar 2021**
- Royal Microscopical Society Summer Studentship (£2000) **Jun-Aug 2020**
- Nancy Smilie Award 2016-2017 for Photography (Hillhead High School) **Jan 2017**
- Bronze Duke of Edinburgh's Award **Nov 2016**
- Charles Hepburn Scholarship Trust (Hillhead High School) **Sep 2016**
- Netball Leaders Award (Hillhead High School) **Jan 2014**

Interests: Going to the gym, swimming, reading, writing/blogging, networking, web development, server-side development, cloud, DevOps.